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## Japanese journal of crop science

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#### Rice Seeding Establishment in Drill Direct Sowing with the Use of Recycled-Paper Mulch

Minoru YAMAUCHI

1) Chugoku Natl.Agr.Exp.Strn.

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#### Abstract:

The use of recycled paper mulch for rice cultivation eliminates the need to use herbicides. The technology of transplanting with recycled paper mulch has been established and used by farmers in Japan. To reduce the labor requirement of transplanting with recycled paper mulch, we developed a direct sowing method with recycled paper mulch. Currently, we hold five rice seeds between two layers of non-woven cloth and paste them on a planting hole of the recycled paper. The seeds are attached to the paper in a hilly manner at 30x15 cm spacing. The paper is spread on the surface of puddled soil after drainage. The problem is that the seedlings are apt to be eaten by birds because the seeds are on the soil surface and exposed to the air. In addition, the complex structure of the seed-attached recycled-paper prevents the low cost mass production. We assumed that attachment of the seeds accommodated in a seed tape underneath the paper which has slits for the emergence of seedlings would reduce the damage by birds and make mass-production possible. This study was conducted to reveal the feasibility of seedling establishment of seeds placed underneath the paper mulch. The seedling establishment was controlled by the shape of the slits. When two lines of slits were made in parallel 5 mm apart, and the seed was placed every 2 cm in the seed tape between the slits, we achieved seedling establishment of 60% and 100 seedlings per m<sup>2</sup>, suggesting the feasibility of drill direct sowing with recycled paper mulch.

#### Keywords:

Direct sowing, Mulch, Recycled-paper, Rice, Seeding establishment, Sowing method

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